REMARKS

Reconsideration of the application is respectfully requested. Claims 1-16 are pending and at issue.

Objection to the Specification

The Examiner has requested that a substitute specification with double-spaced lines be submitted to facilitate the Examiner's "reading and entry of amendments" (Office Action, p. 2). Submitted herewith is a double-spaced substitute specification, which, with the exceptions of line spacing and line numbering, is identical to the original specification as filed on May 18, 2001. No new matter has been added. Therefore, this objection should be withdrawn.

Rejections Under 35 U.S.C. § 102(b)

Claims 1-16 stand rejected as anticipated by U.S. Patent No. 5,250,282 to Kresge et al. ("the '282 patent"). The Examiner states that the '282 patent teaches a magnesium chloride based carrier containing a titanium alkoxide compound and an alcohol such that the x-ray powder diffraction spectrum has one or two main diffraction lines at 2θ in the range of 1-50° for anhydrous α-magnesium chloride, which is calculated in nm instead of degrees.

The rejection is respectfully traversed, and reconsideration is requested.

The '282 patent fails to anticipate the present claims because the '282 patent does not teach or suggest, either expressly or inherently, a magnesium chloride based carrier that contains a titanium alkoxide and an alcohol and that has an x-ray

diffraction spectrum that includes peaks at the claimed regions of 2θ in the range of 2-14° and 2θ in the range of 14-50°.

The Examiner asserts that the '282 patent teaches a magnesium chloride based carrier having the presently claimed x-ray diffraction spectrum. A person of ordinary skill in the art would understand the language of claim 1 to require that magnesium chloride be present in the carrier. However, the '282 patent does not teach or suggest the presence of magnesium chloride in any of its disclosed compositions. Rather, the '282 patent is limited to a process for using amphiphilic compounds to prepare a mesoporous *crystalline oxide* material, such as MCM-41 (an exemplary compound in the '282 patent) ('282 patent: col. 1, lines 18-23; col. 6, lines 17-19; and col. 18, lines 42-45). In contrast, the present claims are directed to *magnesium chloride*, not an oxide.

The '282 patent's failure to teach or suggest the presence of magnesium chloride in any of its disclosed compounds is further illustrated by the x-ray diffraction spectra described in the '282 patent, which, in contrast with the Examiner's assertion, do **not** include any peaks at the presently claimed 2θ of 14-50°. Peaks in this range are characteristic of α-magnesium chloride. To further illustrate this point, the '282 patent states:

> Certain of the calcine crystalline non-layered materials described herein may be characterized by an X-ray diffraction pattern with at least two peaks at positions greater than about 10 Angstrom Units d-spacing (8.842 degrees two-theta for Cu K-alpha radiation), at least one of which is at a position greater than about 18 Angstrom Units d-spacing, and no peaks at positions less than

> about 10 Angstrom units d-spacing[1] with relative intensity greater than about 20% of the strongest peak. The X-ray diffraction pattern of calcine material described herein may have no peaks at positions less than about 10 Angstrom units d-spacing with relative intensity greater than about 10% of the strongest peak.

('282 patent: col. 12, lines 3-11 (emphasis added)). The '282 patent expressly states that there are no peaks at positions less than about 10 Angstrom units d-spacing (i.e., at 2θ of greater than about 8.842°). Thus, the compositions disclosed in this reference simply cannot include the presently claimed α-magnesium chloride because peaks that are characteristic of α-magnesium chloride (i.e., in the range of 2θ of 14-50°) are absent from the x-ray diffraction spectrum described in the '282 patent.

Additionally, the magnesium chloride based carrier described in the present application does not involve dissolving magnesium chloride in alcohol. The Examiner asserts, "It is well known in the art that magnesium chloride is solubilized in alcohol" (Office Action, p. 3). While the prior art cited in the present application (e.g., U.S. Patent No. 4,421,674 and EP700936A cited on pages 2-3 of the double-spaced substitute specification) discloses processes that include dissolving magnesium chloride in alcohol, the magnesium chloride based carriers exemplified in the present application are not prepared by such a process. The cited prior art discloses processes that involve the steps of dissolving anhydrous α-magnesium chloride in alcohol, followed by dealcoholizing (*See* double-spaced substitute specification: p. 2, lines 13-15; and p. 2, line 25 to p. 3, line 3). In contrast, the presently claimed magnesium

[1] According to Bragg's law ($n\lambda = 2d\sin\theta$), a peak at a position greater than about 18 Angstrom units d-spacing is equivalent to a peak at 2θ of less than 4.909°.

chloride based carrier is prepared in the Examples of the present application without such dissolution and dealcoholization steps (*See* double-spaced substitute specification: p. 6, lines 1-2; and pp. 13-14, Example 5). For instance, Example 5 of the present application includes the use of alcohol, but the extremely small amount used is insufficient to dissolve the anhydrous α-magnesium chloride. Thus, the magnesium chloride based carrier described in the present Examples is prepared by a process that differs from the processes disclosed in the above-cited prior art.

The magnesium chloride products disclosed in U.S. Patent No. 4,421,674 and EP00936A are prepared by dissolving the magnesium chloride in alcohol and dealcoholizing, and do not include anhydrous α-magnesium chloride. Upon dissolution in alcohol, the α-magnesium chloride described in U.S. Patent No. 4,421,674 and EP700936A loses its original crystal structure. *See, e.g.*, double-spaced substitute specification: p. 2, lines 17-18. Even after removing the alcohol, the magnesium chloride does not return to its original α crystal structure. *See*, J. C. Bart et al., *J. Mater. Sci.*, vol. 30, p. 2818, col. 2, line 6 from the bottom (a copy of which is attached as Exhibit A).

Accordingly, the presently claimed magnesium chloride carrier, which shows, *inter alia*, the characteristic peaks of anhydrous α-magnesium chloride, is different than that disclosed in U.S. Patent No. 4,421,674 and EP700936A, which does not include anhydrous α-magnesium chloride.

Furthermore, the Examiner asserts that the '282 patent teaches a magnesium chloride based carrier containing a titanium alkoxide and an alcohol. To support this

assertion, the Examiner cites to column 15, lines 32-34 and 39-43 of the '282 patent. This section of the '282 patent relates to a process for stabilizing the materials synthesized according to the '282 patent. The '282 patent states:

> Certain as-synthesized forms of MCM-41 and MCM-48 may not be sufficiently thermally stable .... However, certain thermally unstable, as-synthesized forms of MCM-41 and MCM-48 may be stabilized by a stabilization treatment .... This stabilization treatment involves contacting the material with a compound of the formula
>
> $M'X'_2Y'_n$
>
> where M' is ... titanium; X' represents ... alkoxides having 1-6 carbon atoms .... The treatment mixture containing crystalline material and $M'X'_2Y'_n$ may also include solvents ...such as alcohols ....

('282 patent: col. 15, lines 18-42). In view of the above citation, it is clear that the titanium alkoxide and alcohol are contained in the "treatment mixture" that is used to stabilize the crystalline material, and are not necessarily contained in the crystalline material itself. Thus, the '282 patent does not disclose a carrier (magnesium chloride based or otherwise) that contains a titanium alkoxide and an alcohol.

In order for a prior art reference to anticipate the claimed invention, each and every element of the claimed invention must be in the prior art reference. The '282 patent fails to teach or suggest, either expressly or inherently, a magnesium chloride based carrier. The '282 patent also fails to teach or suggest, either expressly or inherently, a magnesium chloride based carrier having an x-ray diffraction spectrum that includes peaks in the range of 2θ of 14-50°, or a magnesium chloride based carrier containing a titanium alkoxide and an alcohol. Therefore, the '282 patent does not

anticipate the presently claimed invention and this rejection should be withdrawn.

Conclusion

In view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining, which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

Dated: March 3, 2004

Jay P. Lessler
Registration No. 41,151
Attorney for Applicant

Darby & Darby P.C.
P.O. Box 5257
New York, NY 10150-5257